



TT7S10

TT7S11S



TT7S10-H

TT7S Isolated & Programmable Temperature Transmitters

TT7S10-H: Loop Powered Head Mount
TT7S10: Loop Powered DIN Rail Mount
TT7S11S: Aux Powered DIN Rail Mount

Isolated. Universal. Accurate

TT7S Series Transmitters are designed for isolated and accurate temperature measurements and signal conditioning applications. TT7S10 is 2-wire loop powered model and TT7S11S is 4-wire auxiliary powered model. TT7S10 and TT7S11S are available in DIN rail version and TT7S10-H is available in head mount version. All the models are programmable for thermocouples, Pt-100 RTD, mV and resistance/potentiometer. Output signal is standard 4-20mA in 2-wire and mA or volts in 4-wire models. Programming of the transmitters is easy by means of user friendly mTRAN windows based configuration software.

TT7S Series Transmitters are built using the latest technology to deliver high performance in accuracy, resolution, stability and isolation. Zero/Span adjustments, sensor break detection/protection, reverse output and reverse polarity protection are standard features across all models.

Software techniques like polynomial linearization and digital filtering gives linearized and stable output in harsh industrial conditions, high level of isolation between input and output prevents ground loop errors and protects costly measurement and control systems under fault conditions.

mTRAN a windows based software is used for configuring, calibration and monitoring the TT7S Transmitters.

Features

- Universal input (RTD, Thermocouple, Ohm, mV)
- Full three port isolation
- Linearized output
- Highly accurate
- Fully programmable for input type & range
- Fast response time: <500 ms
- Digital filter
- Available with EMI-EMC compliance (Applicable for TT7S11S only and optional)
- Windows based mTRAN software for configuration, calibration & monitoring
- Reverse polarity protection
- Direct/Reverse output
- Sensor break detection
- Loop/Aux powered models

Applications

- Power plants
- Metal industry
- Oil & Gas
- Chemical
- Glass industry
- Cement
- Fertilizer

TECHNICAL SPECIFICATIONS

Input		Supply	
Input Type		TT7S10 & TT7S10-H	8.5-36 V DC, 2-Wire
RTD	Pt-100 3-Wire (3/4-Wire in TT7S11S)	TT7S11S	
Resistance/Potentiometer	0-2500Ω	Supply	20-265 V DC/AC (50-60Hz)
Sensor Current	0.2 mA	Power Consumption	<3W
Thermocouple	E, J, K,T,B,R,S,N (ANSI standard)	Isolation	
mV	0-75mV/ 0-500mV DC	TT7S10 & TT7S10-H	
Input Impedance	> 1MΩ	Galvanic Isolation of 1.5KVAC for 1 minute between Input and Output	
Sensor Break Current	< 1 uA	TT7S11S	
Input Range	Refer table -1	Between Power to Input and Output	
Zero/Span Adjust	Through mTRAN software	<ul style="list-style-type: none"> Reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 3KVAC (For CE marked model) Galvanic Isolation of 3KVAC for 1 minute (For CE marked and Non-CE model) 	
Accuracy		Between Input to Output	
E, J, K, T, N, Pt-100	0.1% of FS, ± 1 Degree	<ul style="list-style-type: none"> Functional insulation according to IEC/EN 61010-1, rated insulation voltage 1.5KVAC (For CE marked model) Galvanic Isolation of 1.5KVAC for 1 minute (For CE marked and Non-CE model) 	
B, R, S	0.25% of FS, ± 1 Degree		
mV, Ω	0.1% of FS, ± 1 Unit		
CJC Error			
E, J, K, T, N	±2 °C		
R, S	±3 °C		
Stability	±0.1% per year		
Response Time	< 500 msec		
Digital Filter	0-20 settable through software (2 default)		
CMRR	>120 dB		
NMRR	≈ 40 dB		
Temp-co	<150 ppm		
Output		Physical	
TT7S10 & TT7S10-H		Mounting	
Output	4-20mA or 20-4mA (User set)	TT7S10 & TT7S11S	35 mm DIN Rail
Resolution	1 uA	TT7S10-H	Sensor head
Sensor Break Output	Lo < 3.4 mA or Hi >20.8mA (User set)	Dimensions	
Output Load	R load= (Voltage supply - 8.5)/0.021 Ω	TT7S10 & TT7S11S	12.5(W) x 100.2(H) x 115.2(D) mm
TT7S11S		TT7S10-H	
Output (Direct/Reverse)	0/4-20mA, 0/1-5V, 0/2-10V (User selectable)	Diameter	46mm
Resolution:		Height	28mm
Current	1 uA	Enclosure Material	
Voltage	0-25mV (0/1-5V), 0-50mV(0/2-10V)	TT7S10-H	Polycarbonate
Sensor break Output	Lo < 1.9mA or Hi >20.8mA (User set)	TT7S10 & TT7S11S	PA66
Output Load:		Environmental	
Current	< 750Ω	Operating Temperature	
Voltage	> 4KΩ	TT7S10-H	0 to 85 °C
		TT7S10 & TT7S11S	0 to 55 °C
		Storage Temperature	-20 to +85 °C
		Humidity	30 to 95% (Non-condensing)
		Table-1: Input Range	
		Input Type	Ranges
		E	-200 to 1000 °C
		J	-200 to 1200 °C
		K	-200 to 1370 °C
		T	-200 to 400 °C
		Thermocouple	
		B	450 to 1800 °C
		R	0 to 1750 °C
		S	0 to 1750 °C
		N	-200 to 1300 °C
		RTD	
		Pt-100	-200 to 850.0 °C
		Linear	
		0 - 75mV	-1999 to 9999
		0 - 500mV	
		Potentiometer	
		0-2500Ω	-1999 to 9999

ORDERING CODE

Model	Transmitter Type	Input Type	Output	CE Compliance
TT7S	X	X	X	X
10	Loop-Powered Din Rail Mount	1	4-20mA	N NO
11S	Aux-Powered Din Rail Mount	2	0-20mA	Y* YES
10-H	Loop-Powered Head Mount	3	1-5V	
		4	0-10V	
		5	0-5V	
		6	2-10V	
		7	S	
		8	N	
		9	Pt-100	
		U	0-75mV	
		H	0-500mV	
		I	0-2500Ω	

Option:TT7SCC - Configuration cable@ extra cost

mTRAN Software: Website download

* Available in Aux Powered model TT7S11S only